

December 17, 1982

DOCUMENTATION RECORDS  
FOR  
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Fansteel Metals

LOCATION: Two miles northeast of Muskogee, OK T15N, R19E, Sec. 16 & 17



## GROUND WATER ROUTE

### 1. OBSERVED RELEASE

Contaminants detected (5 maximum):

None detected

HRS value = 0

Rationale for attributing the contaminants to the facility:

N/A

### 2. ROUTE CHARACTERISTICS

#### Depths to Aquifer of Concern

Name/description of aquifer(s) of concern:

Alluvial Aquifers: The alluvial aquifers consist of alluvium and terrace deposits of Quaternary and Tertiary age along the major rivers (clay and silt grading downward into coarse sand with local gravel lenses). These deposits generally extend from 1 mile to 15 miles from the rivers and their thickness range from a few feet to about 300 feet. The common range for depth of the alluvial aquifers is generally 50-100 feet (Ref. 6, pp. 347-348).

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

Depth from the ground surface to the highest seasonal level of the saturated zone of the aquifer of concern is 45 feet (Ref. 2, p. 8).

Depth from the ground surface to the lowest point of waste disposal/storage:

Depth from the ground surface to the lowest point of waste disposal in the acid waste water settling pond is 28 feet (Ref. 2, Surface Impoundment Inspection Report).

45 feet (depth to water)  
-28 feet (lowest point of waste disposal)  
17 feet (depth to aquifer of concern)

HRS Value = 3

### Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual precipitation is 42 inches (Ref. 1 p. 14).

Mean annual lake or seasonal evaporation (list months for seasonal):

Mean annual lake evaporation is 50 inches (Ref. 1, p. 13).

Net precipitation (subtract the above figures):

42 inches
<u>-50 inches</u>
-8 inches

HRS value = 1

### Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Soil type in unsaturated zone consists of clay and silt in upper part grading downward into fine to coarse and with local lenses of fine gravel (Ref. 06, p. 348).

Permeability associated with soil type:

Clay soil hydrologic conductivity:  $<10^{-7}$  cm/sec (Ref. 1, p. 16).

HRS value = 0

### Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Physical state of substances is acid sludge in the unlined landfill (Ref. 2, Landfill Site Inspection Report).

HRS value = 3

### 3. CONTAINMENT

#### Containment

Method(s) of waste or leachate containment evaluated:

Surface impoundments contain compatible liners. Landfill contains no liner (Ref. 2: Landfills SI Report and Surface Impoundments SI Report).

Method with highest score:

Landfill, no liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control (Ref. 1, p. 17).

HRS value = 3

### 4. WASTE CHARACTERISTICS

#### Toxicity and Persistence

Compound(s) evaluated:

Arochlor (PCB)-1254, Manganese, Lead (Ref. 07).

Compound with highest score:

Arochlor (PCB)-1254, Manganese and Lead have an HRS value equal to 18 (Ref. 1, Ref. 3)

#### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Acid sludge from the wastewater pit was deposited in an unlined landfill. Dimensions of the landfill are unknown (Ref. 2, Landfills Site Inspection Report).

HRS value = 1

Basis of estimating and/or computing waste quantity:

HRS value of 1 given by default.

## 5. TARGETS

### Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

The use of groundwater from the aquifer of concern within a 3-mile radius of the facility is irrigation; another source presently available; not used but useable (Ref.1, p. 24; Ref.4).

*- neither of these references documents that another source is available for*  
HRS value = 1 *irrigation instead of the wells being used.*

### Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Location of nearest well drawing from aquifer of concern is an irrigation well located in T15N, R19E, Section 15 (Ref. 4).

Distance to above well or building:

Distance to above well is not known. T15N, R19E Section 15 is 4,000 feet from hazardous substance (Ref. 8).

HRS value = 3 ✓

### Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

There is no ground water use for drinking purposes within the 3-mile radius of the facility (Ref. 5). Population served = 0.

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

The exact number of acres irrigated from ground water is unknown but ground water is used for irrigation (Ref. 4).

Total population served by ground water within a 3-mile radius:

Total population served is unknown. There are four irrigation wells present within the 3-mile radius. *If a little over sixty acres were irrigated, the HRS value would be raised to a matrix value of 16*

HRS matrix value = 8

HRS value = 1

## SURFACE WATER ROUTE

### 1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No observed release of contaminants has been documented.

HRS value 0

Rationale for attributing the contaminants to the facility:

N/A

HRS value = 0

### 2. ROUTE CHARACTERISTICS

#### Facility Slope and Intervening Terrain

Average slope of facility in percent:

From Point A to Point B:

$$\frac{\begin{array}{cc} \text{(Point A)} & \text{(Point B)} \\ 525 \text{ ft} & - 500 \text{ ft} \end{array}}{1500 \text{ ft}} = \frac{25}{1500} \times 100 = 1.66\%$$

Name/description of nearest downslope surface water:

The Arkansas River bounds the east side of the site (Ref. 8).

Average slope of terrain between facility and above-cited surface water body in percent:

The average slope of the terrain between the facility and the surface water body is 0% (Ref. 8).

HRS value 0

Is the facility located either totally or partially in surface water?

The facility is not located either totally or partially in surface water (Ref. 8).

Is the facility completely surrounded by areas of higher elevation?

The facility is not completely surrounded by areas of higher elevation (Ref. 8).

1-Year 24-Hour Rainfall in Inches

The one-year twenty-four hour rainfall is 3.25 inches (Ref. 1 p. 33).

HRS value = 3

Distance to Nearest Downslope Surface Water

The distance to the nearest downslope surface water from hazardous substance is 375 feet. This is measured from most downhill point of contamination to surface water (Ref. 8).

HRS value = 3

Physical State of Waste

Acid sludge was deposited in the landfill (Ref. 2, Landfills Site Inspection Report).

HRS value = 3

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill is not lined and some holes were visible in the cover (Ref. 2, Landfills Site Inspection Report).

Surface impoundment diking sound, inadequate freeboard (Ref. 2).

Method with highest score:

Landfill not adequately covered and diversion system sound (Ref. 1, p. 35).

HRS value = 1

#### 4. WASTE CHARACTERISTICS

##### Toxicity and Persistence

Compound(s) evaluated:

Arochlor (PCB) 1,254 lead, manganese (Ref. 7).

Compound with highest score:

Arochlor (PCB) 1,254, lead and manganese have an HRS value of 18 (Ref 1; Ref. 3).

HRS value = 18

##### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Total quantity of hazardous substances at facility is unknown.

HRS value = 1

Basis of estimating and/or computing waste quantity:

HRS value of 1 is given by default.



## 5. TARGETS

### Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Arkansas River is suitable for navigation, fish and wildlife propagation, primary and secondary recreation, water supply (Ref. 2, p.9).

HRS value = 2

Is there tidal influence?

There is no tidal influence (Ref. 8).

### Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The distance to 5-acre coastal wetland is greater than 2 miles (Ref. 8).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance from 5-acre fresh-water wetland is greater than 1 mile (Ref. 8).

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

The Bald Eagle, Haliaeetus lencoecephalus, nests near the Arkansas River near Muskogee during the winter (Ref. 9, Ref. 10). An HRS value of 1 is assigned until the locations of these nest in relation to the site are determined. This information will be acquired prior to a final HRS assessment.

HRS value = 1

### Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

*what kind of water supply?  
If its drinking water supply  
then HRS value should be 3.  
Ref. 2, p.9 - where did they get  
this information.*

Location of water-supply intakes are not within 3 miles (free flowing bodies) or 1 mile (static water bodies) downstream of hazardous substance (Ref. 5; Ref. 8).

HRS value = 0

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

There are no surface water intakes for irrigation purposes (Ref. 5).

Total population served:

Surface water is not used for irrigation and there are no drinking water intakes within three miles downstream of site (Ref. 5; Ref. 8).

Population served = 0

HRS value = 0

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

## AIR ROUTE

### 1. OBSERVED RELEASE

Contaminants detected:

None detected.

HRS value 0

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

### 2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi                      0 to 1 mi                      0 to 1/2 mi                      0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

## FIRE AND EXPLOSION

### 1. CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

### 2. WASTE CHARACTERISTICS

#### Direct Evidence

Type of instrument and measurements:

#### Ignitability

Compound used:

#### Reactivity

Most reactive compound:

#### Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius



## DIRECT CONTACT

### 1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

### 2. ACCESSIBILITY

Describe type of barrier(s):

### 3. CONTAINMENT

Type of containment, if applicable:

### 4. WASTE CHARACTERISTICS

#### Toxicity

Compounds evaluated:

Compound with highest score:

5. TARGETS

Population within one-mile radius

Distance to critical habitat (of endangered species)

Facility Name: Fansteel Metals

Location: Muskogee, OK

EPA Region: VI

Person(s) In Charge of the Facility: James A. Pierret

10 Tantalum Place

Muskogee, OK 74401

Name of Reviewer: Thomas A. Lensing, Jr. Date: 01/20/88

General Description of the facility:

(For example landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Fansteel Metals is a refractory metals manufacturer. There are landfills, surface impoundments and storage facilities on site. The facility is bounded on the east by the Arkansas River, which makes surface water contamination potentially a problem. However, there are no surface water intakes within 3-miles downstream from the facility. The lack of ground water and surface water targets are reflected in the route scores. Air monitoring could provide evidence for an air release.

Scores:  $S_M = 6.53$  ( $S_{gw} = 10.94$   $S_{sw} = 2.83$   $S_a = 0$ )

$S_{FE} = N/A$

$S_{DC} = N/A$

FIGURE 1  
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. Section	
[1] Observed Release	0 45	1	0	45	3.1	
If observed release is given a score of 45, proceed to line [4] If observed release is given a score of 0, proceed to line [2].						
[2] Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	6	6		
Net Precipitation	0 1 2 3	1	1	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	0	3		
Physical State	0 1 2 3	1	3	3		
Total Route Characteristics Score			10	15		
[3] Containment	0 1 2 3	1	3	3	3.3	
[4] Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
[5] Targets					3.5	
Ground Water Use	0 1 2 3	3	3	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	8	40		
Total Targets Score			11	49		
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			6,270	57,330		
[7] Divide line [6] by 57,330 and multiply by 100 $S_{gw} = 10.94$						

FIGURE 2  
GROUND WATER ROUTE WORK SHEET

Surface Water Route Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. Section	
[1] Observed Release	0 45	1	0	45	4.1	
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].						
[2] Route Characteristics					4.2	
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3		
1-yr. 24-hr. Rainfall	0 1 2 3	1	3	3		
Distance to Nearest Surface Water	0 1 2 3	2	6	6		
Physical State	0 1 2 3	1	3	3		
Total Route Characteristics Score			12	15		
[3] Containment	0 1 2 3	1	1	3	4.3	
[4] Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
[5] Targets					4.5	
Surface Water Use	0 1 2 3	3	6	9		
Distance to a Sensitive Environment	0 1 2 3	2	2	6		
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40		
Total Targets Score			8	55		
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			1,824	64,350		
[7] Divide line [6] by 64,350 and multiply by 100 $S_{sw} = 2.83$						

FIGURE 7  
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. Section	
[1] Observed Release	0                  45	1	0	45	5.1	
Date and Location:						
Sampling Protocol:						
If line [1] is 0, the $S_a = 0$ , Enter on line [5]. If line [1] is 45, then proceed to line [2].						
[2] Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3	1		3		
Toxicity	0 1 2 3	3		9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Route Characteristics Score				20		
[3] Targets					5.3	
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30		
Distance to Sensitive Environment	0 1 2 3	2		6		
Land Use	0 1 2 3	1		3		
Total Targets Score				39		
[4] Multiply [1] x [2] x [3]				35,100		
[5] Divide line [4] by 35,100 and multiply by 100 $S_a = 0$						

FIGURE 9  
AIR ROUTE WORK SHEET

	S	S <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )	10.94	119.68
Surface Water Route Score (S <sub>sw</sub> )	2.83	8.01
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		127.69
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		11.30
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		6.53

FIGURE 10  
WORKSHEET FOR COMPUTING S<sub>M</sub>

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. Section
[1] Containment	1                      3	1		3	7.1
[2] Waste Characteristics <span style="float: right;">7.2</span>					
Direct Evidence	0                      3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
[3] Targets <span style="float: right;">7.3</span>					
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
[4] Multiply [1] x [2] x [3]				1,440	
[5] Divide line [4] by 1440 and multiply by 100 $S_{FE} =$					

FIGURE 11  
FIRE AND EXPLOSION WORK SHEET



Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. Section)
[1] Observed Incident	0                      45	1		45	8.1
If line [1] is 45, proceed to line [4] If line [1] is 0, proceed to line [2]					
[2] Accessibility	0 1 2 3	1		3	8.2
[3] Containment	0 15	1		15	8.3
[4] Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
[5] Targets					8.5
Population Within a 1-mile radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]				21,600	
[7] Divide line [6] by 21,600 and multiply by 100 $S_{DC} =$					

FIGURE 12  
DIRECT CONTACT WORK SHEET

## HRS DOCUMENTATION LOG SHEET

SITE NAME Fansteel MetalsCITY Muskogee STATE TXIDENTIFICATION NUMBER OKD007221831

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
01	Uncontrolled Hazardous Waste Site Ranking System: A Users Manual. 47 FR 31219-31243, 16 July 1982 (Appendix A, CERCLA).
02	Duncan, Gordon, FIT Hydrologist. Potential Hazardous Waste Site, Site Inspection Report, Fansteel Metals, Muskogee, OK OKD007221831. October 7, 1981.
03	Sax, N. Irving. 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Co., New York.
04	ROC. To: Nona Aldridge, Oklahoma Water Resources Board, Okla- homa City, OK. From: Thomas A. Lensing, Jr., FIT Biologist. EPA Region VI. Re: Use of Ground Water within Three-Mile radius of the Facility. OKD007221831. October 29, 1987.
05	ROC. To: Richard Horner, City of Muskogee Water Plant, Muskogee, OK. From: Thomas A. Lensing, Jr., FIT Biologist, EPA Region VI, Re: Drinking Water Supply within Three-Mile Radius of the Facility. OKD007221831. October 28, 1987.
06	National Water Summary 1984. USGS Water-Supply Paper 2275.
07	McDonald, Gene. Memorandum to EPA about Sampling Inspection of Fansteel Metals Site, Muskogee, OK. OKD007221831. October 24, 1987. Analytical Sample Results.
08	USGS 7.5 minute series topographic maps. NE Muskogee, 1974, SE Muskogee, 1974. Braggs, 1974, Ft. Gibson. 1974.
09	Endangered Species of Texas and Oklahoma. US Fish and Wildlife Service. 1984.
10	ROC To: John Skeen, US Fish and Wildlife Service, Oklahoma City, OK, From: Thomas A. Lensing, Jr., FIT Biologist, EPA Region VI. Re: Location of Critical Habitats Near Muskogee, OK, 1-15-88.

Ref. 01

# **Uncontrolled Hazardous Waste Site Ranking System**

## **A Users Manual (HW-10)**

Originally Published in  
the July 16, 1982, *Federal Register*

United States  
Environmental Protection  
Agency

1984



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT

REGION  
6

SITE NUMBER (to be assigned by HQ)  
OK03549

**GENERAL INSTRUCTIONS:** Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME FANSTEEL METALS		B. STREET (or other identifier) 10 Tantalum Place	
C. CITY Muskogee	D. STATE OK	E. ZIP CODE 74401	F. COUNTY NAME Muskogee
G. SITE OPERATOR INFORMATION		2. TELEPHONE NUMBER (918)687-6303	
1. NAME James A. Pierret			
3. STREET 10 Tantalum Place	4. CITY Muskogee	5. STATE OK	6. ZIP CODE 74401
H. REALTY OWNER INFORMATION (if different from operator of site)		2. TELEPHONE NUMBER	
1. NAME Same			
3. CITY		4. STATE	5. ZIP CODE

I. SITE DESCRIPTION A metals fabricator which uses a series of waste water settling ponds.

J. TYPE OF OWNERSHIP  
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.)	B. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input checked="" type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE
---	---

C. PREPARER INFORMATION		
1. NAME Gordon Duncan	2. TELEPHONE NUMBER (214)742-4521	3. DATE (mo., day, & yr.) Oct. 7, 1981

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION		
1. NAME Gordon Duncan	2. TITLE FIT Hydrologist	
3. ORGANIZATION Ecology & Environment, Inc., 1509 Main St., Dallas, TX 75201		4. TELEPHONE NO. (area code & no.) (214)742-4521

B. INSPECTION PARTICIPANTS		
1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Sandra K. Antoinette	Ecology & Environment, Inc.	(214)742-4521

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)		
1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
James H. Pierret	Plant Manager (918)687-6303	10 Tantalum Place, Muskogee, OK
Thomas Carlisle	Services Manager (918)687-6303	10 Tantalum Place, Muskogee, OK

## III. INSPECTION INFORMATION (continued)

## D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
Fansteel Metals	(918)687-6303	10 Tantalum Pl., Muskogee, OK	acid wastewater, acid sludge, lime wastewater & sludge.

## E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
N/A			

## F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS
N/A		

## G. DATE OF INSPECTION

(mo., day, year)  
8/23/81

## H. TIME OF INSPECTION

9:00 A.M.

## I. ACCESS GAINED BY: (credentials must be shown in all cases)

☒ 1. PERMISSION☐ 2. WARRANT

## J. WEATHER (describe)

Warm, clear skys 85° - 90° F

## IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL Runoff outfall (Sediment)	X (1)	Houston EPA Lab	Oct. 2, 81
h. VEGETATION			
i. OTHER (specify) Seepage (sediment)	X (1)	Houston EPA Lab	Oct. 2, 81

## B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS
None		

Continued From Page 2

## IV. SAMPLING INFORMATION (continued)

## C. PHOTOS

## 1. TYPE OF PHOTOS

☒ a. GROUND ☐ b. AERIAL

## 2. PHOTOS IN CUSTODY OF:

EPA Region 6 (See Attachments)

## D. SITE MAPPED?

☒ YES. SPECIFY LOCATION OF MAPS: Site sketch attached

## E. COORDINATES

## 1. LATITUDE (deg.-min.-sec.)

35°46'26"N

## 2. LONGITUDE (deg.-min.-sec.)

95°18'13"W

## V. SITE INFORMATION

## A. SITE STATUS

☒ 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)☐ 2. INACTIVE (Those sites which no longer receive wastes.)☐ 3. OTHER (specify):  
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

## B. IS GENERATOR ON SITE?

☐ 1. NO☒ 2. YES (specify generator's four-digit SIC Code): 3339, 3341

## C. AREA OF SITE (in acres)

120

## D. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO☒ 2. YES (specify): 7 (Currently adding one more)

## VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input checked="" type="checkbox"/> A. TRANSPORTER	<input checked="" type="checkbox"/> B. STORER	<input checked="" type="checkbox"/> C. TREATER	<input checked="" type="checkbox"/> D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN PUMP
4. TRUCK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM/PHYS./TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

☐ 1. STORAGE☐ 2. INCINERATION☒ 3. LANDFILL☒ 4. SURFACE IMPOUNDMENT☐ 5. DEEP WELL☐ 6. CHEM/BIO/PHYS TREATMENT☐ 7. LANDFARM☐ 8. OPEN DUMP☐ 9. TRANSPORTER☐ 10. RECYCLOR/RECLAIMER

See Attachment "A"

## VII. WASTE RELATED INFORMATION

## A. WASTE TYPE

☒ 1. LIQUID☐ 2. SOLID☒ 3. SLUDGE☐ 4. GAS

## B. WASTE CHARACTERISTICS

☒ 1. CORROSIVE☐ 2. IGNITABLE☐ 3. RADIOACTIVE☐ 4. HIGHLY VOLATILE☒ 5. TOXIC☐ 6. REACTIVE☐ 7. INERT☐ 8. FLAMMABLE☐ 9. OTHER (specify):

## C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Waste Stream Records

Continued From Front

## VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category; Mark 'X' to indicate which wastes are present.

1. SLUDGE	3. DIL	2. SOLVENTS	4. CHEMICALS	5. SOLIDS	6. OTHER
AMOUNT 31 Million	AMOUNT None	AMOUNT None	AMOUNT 133,000	AMOUNT None	AMOUNT None
UNIT OF MEASURE lbs/yr	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE gal/day	UNIT OF MEASURE	UNIT OF MEASURE
(1) PAINT PIGMENTS	(1) OILY WASTES	(1) HALOGENATED SOLVENTS	(1) ACID Wastewater	(1) FLYASH	(1) LABORATORY WASTEWATER
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGENATED SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
X (5) OTHER (specify): Acid wastewater sludge, lime wastewater sludge			(5) OVEN/INNS	(5) NON-FERROUS SMELTING WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			X (9) PCB		
			X (10) METALS		
			X (11) OTHER (specify): Lime wastewater *See Attachment A		

C. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')		3. TOXICITY (mark 'X')					4. CAS NUMBER	5. AMOUNT	6. UNIT
	B. SOL LID	C. VAP LID	D. VAP POR	E. HIGH MED	F. LOW MED	G. NONE				
Beryllium	X						7440-41-7	3.8		ppm
Chromium	X						7440-47-3	59.9		ppm
Lead	X						7439-92-1	60.5		ppm
Nickel	X						7440-02-0	39.6		ppm
Ammonium fluoride		X					2115-01-8	Unknown		
Calcium fluoride		X					7789-75-5	"		
Potassium fluoride		X					7789-23-3	"		
Ammonium hydroxide		X					1136-21-6	"		
Residue sludge	X						None	35		M <sup>3</sup> /yr
Calcium oxide		X					1305-78-8	Unknown		
Sodium fluoride		X					7681-49-4	"		
Ammonium sulfate		X					7783-20-2	"		
Arochlor (PCB) 1254		X					1097-69-1	5.17		ppm

Note: The levels of arochlor (PCB) 1254 found in the sediment samples taken appears to be excessive. Also, the levels of chromium, lead, nickel & beryllium (See Attach. A)

## VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

☐ A. HUMAN HEALTH HAZARDS

## VIII. HAZARD DESCRIPTION (continued)

☐ B. NON-WORKER INJURY/EXPOSURE☐ C. WORKER INJURY/EXPOSURE☐ D. CONTAMINATION OF WATER SUPPLY☐ E. CONTAMINATION OF FOOD CHAIN☒ F. CONTAMINATION OF GROUND WATER

OSDH files indicate probable groundwater contamination originating from an acid sludge deposit on site. No monitor wells were sampled during the inspection but sampling is recommended in the future.

☒ G. CONTAMINATION OF SURFACE WATER

Both runoff sediment samples taken during the inspection contained increased levels of aroclor 1254 (PCB) and other contaminants (see VII D). The samples were taken from down-dip runoff paths which then flow directly into the Arkansas River.

Although there is a transformer sub-station on-site (see aerial photos), it cannot be determined if this is where the PCB's originated. Further sampling is recommended to determine the extent of off-site contamination.



## VIII. HAZARD DESCRIPTION (continued)

☐ H. DAMAGE TO FLORA/FAUNA☐ I. FISH KILL☐ J. CONTAMINATION OF AIR☒ K. NOTICEABLE ODORS

Odors of ammonia and methylethylketone noted during inspection.

☒ L. CONTAMINATION OF SOIL

Slightly stained soil off site at sample point #1.

☐ M. PROPERTY DAMAGE

## VIII. HAZARD DESCRIPTION (continued)

☐ H. FIRE OR EXPLOSION☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

Standing liquids noted at several areas on site. Lime pile near standing surface runoff.

☐ P. SEWER, STORM DRAIN PROBLEMS☐ Q. EROSION PROBLEMS☐ R. INADEQUATE SECURITY☐ S. INCOMPATIBLE WASTES

# VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

☒ U. OTHER (specify):

The site sketch shows the location of only 5 of 12 monitor wells located on site. Plant management requires a written EPA request for the location of the other wells.

It is recommended that EPA obtain this information so that a sampling plan can be developed.

## IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	0	0	0	¼ Mile
2. IN COMMERCIAL OR INDUSTRIAL AREAS	0	0	0	¼ Mile
3. IN PUBLICLY TRAVELLED AREAS	5,000	5,000	0	¼ Mile
4. PUBLIC USE AREAS (parks, schools, etc.)	0	0	0	¼ Mile

## X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit) 45 Ft.	B. DIRECTION OF FLOW East toward Arkansas River	C. GROUNDWATER USE IN VICINITY None
D. POTENTIAL YIELD OF AQUIFER 250 gpm	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure) 7 Miles	F. DIRECTION TO DRINKING WATER SUPPLY NNE
G. TYPE OF DRINKING WATER SUPPLY		
<input type="checkbox"/> 1. NON-COMMUNITY < 15 CONNECTIONS <input checked="" type="checkbox"/> 2. COMMUNITY (specify town): <u>Mallard Bay (Fort Gibson Lake)</u>		
<input checked="" type="checkbox"/> 3. SURFACE WATER <input type="checkbox"/> 4. WELL		

Continued From Page 8

## X. WATER AND HYDROLOGICAL DATA (continued)

## H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COM- MUNITY (mark 'X')	5. COMMUN- ITY (mark 'X')
None				

## I. RECEIVING WATER

## 1. NAME

Arkansas River

☐ 2. SEWERS☒ 3. STREAMS/RIVERS☐ 4. LAKES/RESERVOIRS☐ 5. OTHER (specify):

## 6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

Arkansas River suitable for navigation, fish and wildlife propagation, primary and secondary recreation, water supply.

## XI. SOIL AND VEGETATION DATA

## LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE☐ B. KARST ZONE☒ C. 100 YEAR FLOOD PLAIN☐ D. WETLAND☐ E. A REGULATED FLOODWAY☐ F. CRITICAL HABITAT☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

## XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. OVERBURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
X	1. SAND	X	Shale (45' to 50' deep)		
X	2. CLAY				
	3. GRAVEL				

## XIII. SOIL PERMEABILITY

☐ A. UNKNOWN☐ B. VERY HIGH (100,000 to 1000 cm/sec.)☐ C. HIGH (1000 to 10 cm/sec.)☒ D. MODERATE (10 to .1 cm/sec.)☐ E. LOW (.1 to .001 cm/sec.)☐ F. VERY LOW (.001 to .00001 cm/sec.)

## G. RECHARGE AREA

☐ 1. YES☒ 2. NO

3. COMMENTS: Flood plain alluvium

## H. DISCHARGE AREA

☐ 1. YES☒ 2. NO

3. COMMENTS:

## I. SLOPE

1. ESTIMATE % OF SLOPE

1 - 3

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.

East - good

## J. OTHER GEOLOGICAL DATA

Sandy clays are predominant in flood plain.

Continued From Front

#### XIV. PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X')		
					1. YES	2. NO	3. UN- KNOWN
NPDES	OWRB	OK1643	8/12/79	12/31/80	X		
NRC	NRC	NRC930	Unknown	Unknown	X		
State Water	OWRB	CW69020	Unknown	Unknown			X

#### XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☒ NONE ☐ YES (summarize in this space)

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

**SURFACE IMPOUNDMENTS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

**1. TYPE OF IMPOUNDMENT**

Acid Wastewater Settling Pond (#1 - aerial photo)

**2. STABILITY/CONDITION OF EMBANKMENTS**

Good

**3. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc.)**

☐ YES ☒ NO

**4. EVIDENCE OF DISPOSAL OF IGNITABLE OR REACTIVE WASTE**

☐ YES ☒ NO

**5. ONLY COMPATIBLE WASTES ARE STORED OR DISPOSED OF IN THE IMPOUNDMENT**

☒ YES ☐ NO

**6. RECORDS CHECKED FOR CONTENTS AND LOCATION OF EACH SURFACE IMPOUNDMENT**

☒ YES ☐ NO

**7. IMPOUNDMENT HAS LINER SYSTEM**

☒ YES ☐ NO Plastic

**7a. INTEGRITY OF LINER SYSTEM CHECKED**

☒ YES ☐ NO

**7b. FINDINGS**

Liner appears stable. No visible significant defects.

**8. SOIL STRUCTURE AND SUBSTRUCTURE**

Alluvium. Sandy clay and shale.

**9. MONITORING WELLS**

☒ YES ☐ NO

**10. LENGTH, WIDTH, AND DEPTH**

LENGTH 400 ft. WIDTH 230 ft. DEPTH 28 ft.

**11. CALCULATED VOLUMETRIC CAPACITY**

2,576,000 ft.<sup>3</sup>

**12. PERCENT OF CAPACITY REMAINING**

25%

**13. ESTIMATE FREEBOARD**

7 Ft.

**14. SOLIDS DEPOSITION**

☒ YES ☐ NO

**15. DREDGING DISPOSAL METHOD**

Material dredged and deposited on site (see aerial photo)

**16. OTHER EQUIPMENT**

**SURFACE IMPOUNDMENTS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

**1. TYPE OF IMPOUNDMENT**

Lime neutralized wastewater settling pond (#4 aerial photo)

**2. STABILITY/CONDITION OF EMBANKMENTS**

Good

**3. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc.)**

☐ YES ☒ NO

**4. EVIDENCE OF DISPOSAL OF IGNITABLE OR REACTIVE WASTE**

☐ YES ☒ NO

**5. ONLY COMPATIBLE WASTES ARE STORED OR DISPOSED OF IN THE IMPOUNDMENT**

☒ YES ☐ NO

**6. RECORDS CHECKED FOR CONTENTS AND LOCATION OF EACH SURFACE IMPOUNDMENT**

☒ YES ☐ NO

**7. IMPOUNDMENT HAS LINER SYSTEM**

☒ YES ☐ NO Plastic

**7a. INTEGRITY OF LINER SYSTEM CHECKED**

☒ YES ☐ NO

**7b. FINDINGS**

Liner appears good. No visible significant defects.

**8. SOIL STRUCTURE AND SUBSTRUCTURE**

Sandy clay and shale.

**9. MONITORING WELLS**

☒ YES ☐ NO

**10. LENGTH, WIDTH, AND DEPTH**

LENGTH 350 ft. WIDTH 350 ft. DEPTH 25 ft.

**11. CALCULATED VOLUMETRIC CAPACITY**

3,062,500 ft.<sup>3</sup>

**12. PERCENT OF CAPACITY REMAINING**

20%

**13. ESTIMATE FREEBOARD**

5 ft.

**14. SOLIDS DEPOSITION**

☒ YES ☐ NO

**15. DREDGING DISPOSAL METHOD**

Solids have not been dredged to date. Mat'l. building up.

**16. OTHER EQUIPMENT**

System has a french drain.

**SURFACE IMPOUNDMENTS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

**1. TYPE OF IMPOUNDMENT**

Lime Settling Overflow Pond (#5 aerial photo)

**2. STABILITY/CONDITION OF EMBANKMENTS**

Good

**3. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc.)**

☐ YES ☒ NO

**4. EVIDENCE OF DISPOSAL OF IGNITABLE OR REACTIVE WASTE**

☐ YES ☒ NO

**5. ONLY COMPATIBLE WASTES ARE STORED OR DISPOSED OF IN THE IMPOUNDMENT**

☒ YES ☐ NO

**6. RECORDS CHECKED FOR CONTENTS AND LOCATION OF EACH SURFACE IMPOUNDMENT**

☒ YES ☐ NO

**7. IMPOUNDMENT HAS LINER SYSTEM**

☐ YES ☒ NO

**7a. INTEGRITY OF LINER SYSTEM CHECKED**

☐ YES ☐ NO N/A

**7b. FINDINGS**

**8. SOIL STRUCTURE AND SUBSTRUCTURE**

Sandy clay and shale. Alluvial deposits.

**9. MONITORING WELLS**

☒ YES ☐ NO On plant site.

**10. LENGTH, WIDTH, AND DEPTH**

LENGTH 200 Ft. WIDTH 150 Ft. DEPTH 5 Ft.

**11. CALCULATED VOLUMETRIC CAPACITY**

150,000 Ft.

**12. PERCENT OF CAPACITY REMAINING**

30 %

**13. ESTIMATE FREEBOARD**

1.5 Ft.

**14. SOLIDS DEPOSITION**

☒ YES ☐ NO

**15. DREDGING DISPOSAL METHOD**

None to date.

**16. OTHER EQUIPMENT**



**SURFACE IMPOUNDMENTS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

1. TYPE OF IMPOUNDMENT

Lime Settling Overflow Pond ( #6 aerial photo)

2. STABILITY/CONDITION OF EMBANKMENTS

Good

3. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc.)

☐ YES ☒ NO

4. EVIDENCE OF DISPOSAL OF IGNITABLE OR REACTIVE WASTE

☐ YES ☒ NO

5. ONLY COMPATIBLE WASTES ARE STORED OR DISPOSED OF IN THE IMPOUNDMENT

☒ YES ☐ NO

6. RECORDS CHECKED FOR CONTENTS AND LOCATION OF EACH SURFACE IMPOUNDMENT

☒ YES ☐ NO

7. IMPOUNDMENT HAS LINER SYSTEM

☐ YES ☒ NO

7a. INTEGRITY OF LINER SYSTEM CHECKED

☐ YES ☐ NO N/A

7b. FINDINGS

8. SOIL STRUCTURE AND SUBSTRUCTURE

Sandy clay and shale. Alluvial deposits.

9. MONITORING WELLS

☒ YES ☐ NO

10. LENGTH, WIDTH, AND DEPTH

LENGTH 100 ft. WIDTH 75 ft. DEPTH 5 Ft.

11. CALCULATED VOLUMETRIC CAPACITY

37,500 ft.<sup>3</sup>

12. PERCENT OF CAPACITY REMAINING

10%

13. ESTIMATE FREEBOARD

0.5 Ft.

14. SOLIDS DEPOSITION

☒ YES ☐ NO

15. DREDGING DISPOSAL METHOD

None to date.

16. OTHER EQUIPMENT

**LANDFILLS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

1. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc)

☐ YES ☒ NO

2. EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL

☒ YES ☐ NO Acid sludge from wastewater pit (#2 aerial photo)

3. CHECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK

☒ YES ☐ NO Only contains acid sludge waste.

4. WASTES SURROUNDED BY SORBENT MATERIAL

☐ YES ☒ NO

5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED

☒ YES ☐ NO Sludges deposited in old surface impoundment. Diked.

6. EVIDENCE OF PONDING OF WATER ON SITE

☒ YES ☐ NO Very slight ponding on plastic liner cover.

7. EVIDENCE OF IMPROPER/INADEQUATE DRAINING

☐ YES ☒ NO

8. ADEQUATE LEACHATE COLLECTION SYSTEM (If "Yes", specify Type)

☐ YES ☒ NO

8a. SURFACE LEACHATE SPRING

☐ YES ☒ NO

9. RECORDS OF LEACHATE ANALYSIS

☐ YES ☒ NO

10. GAS MONITORING

☐ YES ☒ NO

11. GROUNDWATER MONITORING WELLS

☒ YES ☐ NO

12. ARTIFICIAL MEMBRANE LINER INSTALLED

☐ YES ☒ NO

13. SPECIFIC CONTAINMENT MEASURES (Clay Bottom, Sides, etc)

☒ YES ☐ NO Sand and clay bottom

14. FIXATION (Stabilization) OF WASTE

☐ YES ☒ NO

15. ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY

☐ YES ☒ NO

16. COVER (Type)

Plastic liner (see photos #2 & #3). Some holes visible in liner.

16a. THICKNESS

16b. PERMEABILITY

16c. DAILY APPLICATION

☐ YES ☐ NO

**LANDFILLS SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

**1. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc)**

☐ YES ☒ NO

**2. EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL**

☐ YES ☒ NO

**3. CHECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK**

☐ YES ☒ NO

**4. WASTES SURROUNDED BY SORBENT MATERIAL**

☐ YES ☒ NO

**5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED**

☒ YES ☐ NO Plant solid waste (scrap metal, paper, etc.) dumped in old surface impoundment

**6. EVIDENCE OF PONDING OF WATER ON SITE (aerial # 7 photo).**

☐ YES ☒ NO

**7. EVIDENCE OF IMPROPER/INADEQUATE DRAINING**

☒ YES ☐ NO Water may pond in old impoundment

**8. ADEQUATE LEACHATE COLLECTION SYSTEM (If "Yes", specify Type)**

☐ YES ☒ NO

**8a. SURFACE LEACHATE SPRING**

☐ YES ☒ NO

**9. RECORDS OF LEACHATE ANALYSIS**

☐ YES ☒ NO

**10. GAS MONITORING**

☐ YES ☒ NO

**11. GROUNDWATER MONITORING WELLS**

☒ YES ☐ NO On site.

**12. ARTIFICIAL MEMBRANE LINER INSTALLED**

☐ YES ☒ NO

**13. SPECIFIC CONTAINMENT MEASURES (Clay Bottom, Sides, etc)**

☒ YES ☐ NO Diked impoundment.

**14. FIXATION (Stabilization) OF WASTE**

☐ YES ☒ NO

**15. ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY**

☐ YES ☐ NO N/A

**16. COVER (Type)**

None

**16a. THICKNESS**

N/A

**16b. PERMEABILITY**

N/A

**16c. DAILY APPLICATION**

☐ YES ☐ NO

N/A

**STORAGE FACILITIES SITE INSPECTION REPORT**  
(Supplemental Report)

**INSTRUCTION**  
Answer and Explain  
as Necessary.

1. STORAGE AREA HAS CONTINUOUS IMPERVIOUS BASE

☐ YES ☒ NO

2. STORAGE AREA HAS A CONFINEMENT STRUCTURE

☒ YES ☐ NO Area is diked.

3. EVIDENCE OF LEAKAGE/OVERFLOW (If "Yes", document where and how much runoff is overflowing or leaking from containment)

☒ YES ☐ NO The open area contains a pile of lime (see Panorama #1, and #3 aerial photo) that is used in the neutralization process. The lime is improperly stored and allows surface water runoff to carry the lime through the dike to off site.

4. ESTIMATE TYPE AND NUMBER OF BARRELS/CONTAINERS

N/A Open storage of lime in a pile.

5. GLASS OR PLASTIC STORAGE CONTAINERS USED

☐ YES ☒ NO

6. ESTIMATE NUMBER AND CAPACITY OF STORAGE TANKS

N/A

7. NOTE LABELING ON CONTAINERS

N/A

8. EVIDENCE OF LEAKAGE CORROSION OR BULGING OF BARRELS/CONTAINERS/STORAGE TANKS (If "Yes", document evidence. Describe location and extent of damage. Take PHOTOGRAPHS)

☐ YES ☐ NO

N/A

9. DIRECT VENTING OF STORAGE TANKS

☐ YES ☐ NO N/A

10. CONTAINERS HOLDING INCOMPATIBLE SUBSTANCES (If "Yes", document evidence. Describe location and identity of hazardous waste. Take PHOTOGRAPHS.)

☐ YES ☒ NO

N/A

11. INCOMPATIBLE SUBSTANCES STORED IN CLOSE PROXIMITY (If "Yes", document evidence. Describe location and identity of hazardous waste. Take PHOTOGRAPHS.)

☐ YES ☒ NO

12. ADEQUATE CONTAINER WASHING AND REUSE PRACTICES

☐ YES ☐ NO N/A

13. ADEQUATE PRACTICES FOR DISPOSAL OF EMPTY STORAGE CONTAINERS

☐ YES ☐ NO N/A

ATTACHMENT A

POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT SUPPLEMENT SHEET

Instruction - This sheet is provided to give additional information in explanation of a question on the form T2070-3.

Corresponding  
number on form

Additional Remark and/or Explanation

IV. E, 3

A landfill supplemental report is used to describe condition of old surface impoundment currently used to dispose of acid sludges.

VII, 2, d

Of the 133,000 gpd, approximately 130,000 gpd is lime wastewater. The remaining 3000 gpd is acid wastewater.

VII.D.

detected slightly exceeded the mean background levels for the eastern U.S. \*USGS Geological Survey Professional Paper 574-F, 1975).

4  
N

PROPERTY LINE

PROPERTY LINE

LINED POND  
ACID RESIDUES

DIKE

COVERED  
STORAGE  
ACID RESIDUES

LIME NEUTRALIZATION  
AND PRECIPITATION EQUIPMENT

AMMONIA WATERS  
STORAGE TANKS

AMMONIA STRIPPING  
EQUIPMENT

LINED POND  
PRETREATMENT

OUTFALL  
Surface water

EFFLUENT  
MONITORING  
STATION

OUTFALL

LINED SETTLING  
POND  
BASIC RESIDUES

WATER  
CLASING  
POND

BASIC  
RESIDUES  
OLD

BASIC  
RESIDUES  
OLD

Currently  
used for  
solid waste  
disposal

POTENTIAL STORAGE  
AREA

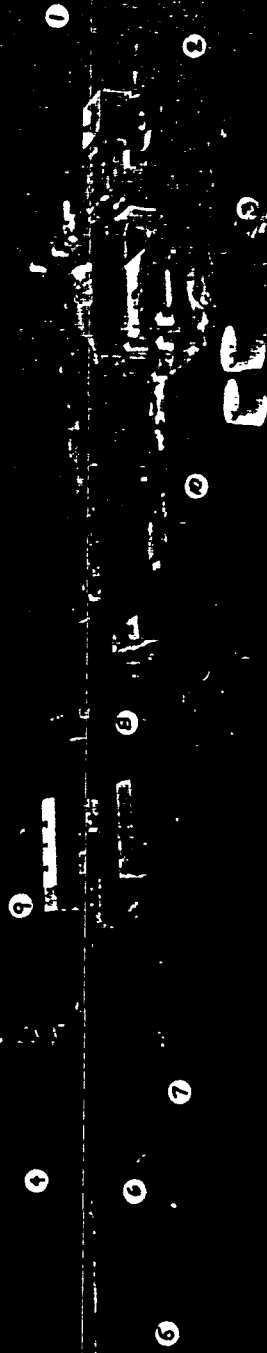
PROPERTY LINE

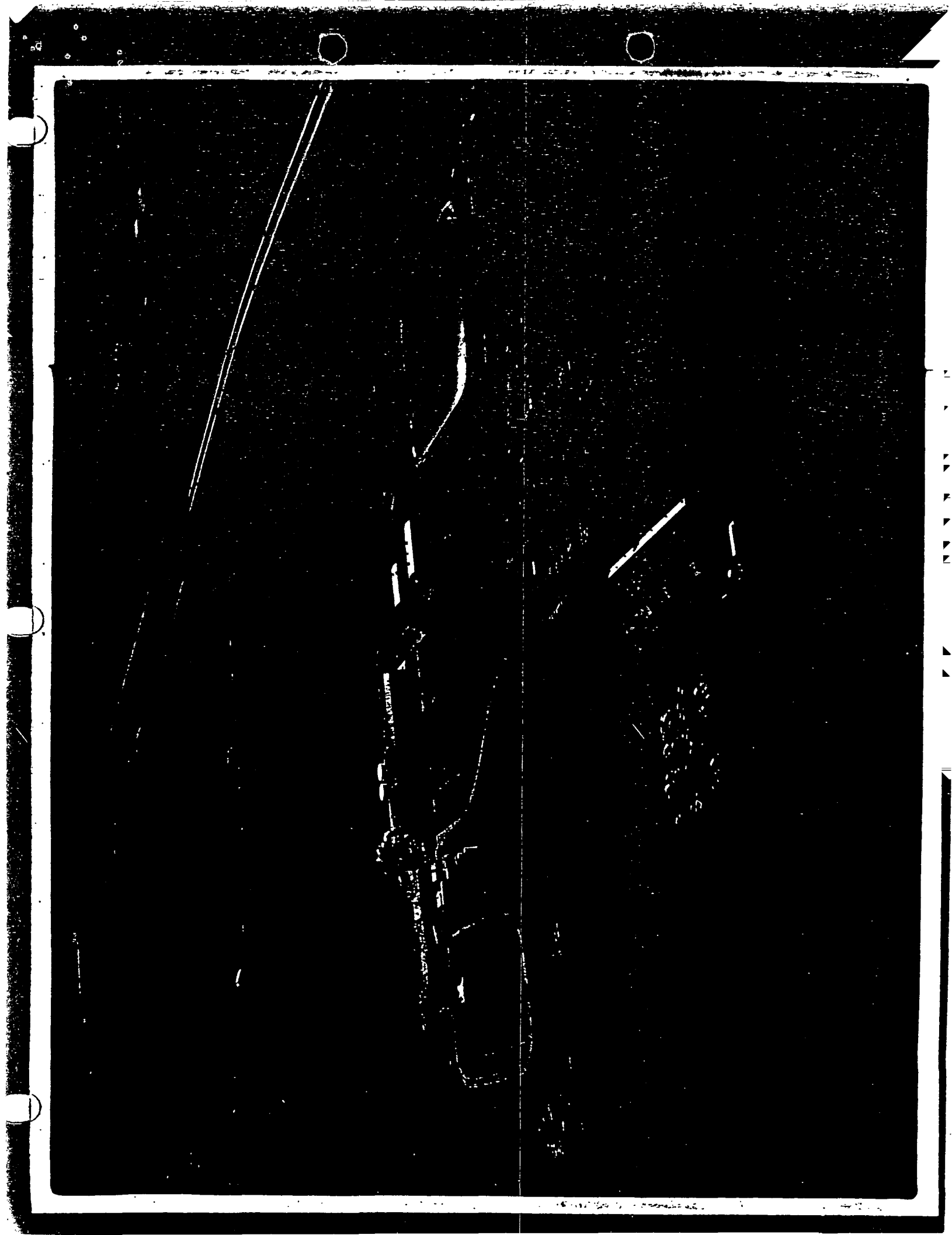
**LEGEND**  
● Sample Points  
● Monitor Wells

SCALE - 1" = 300'

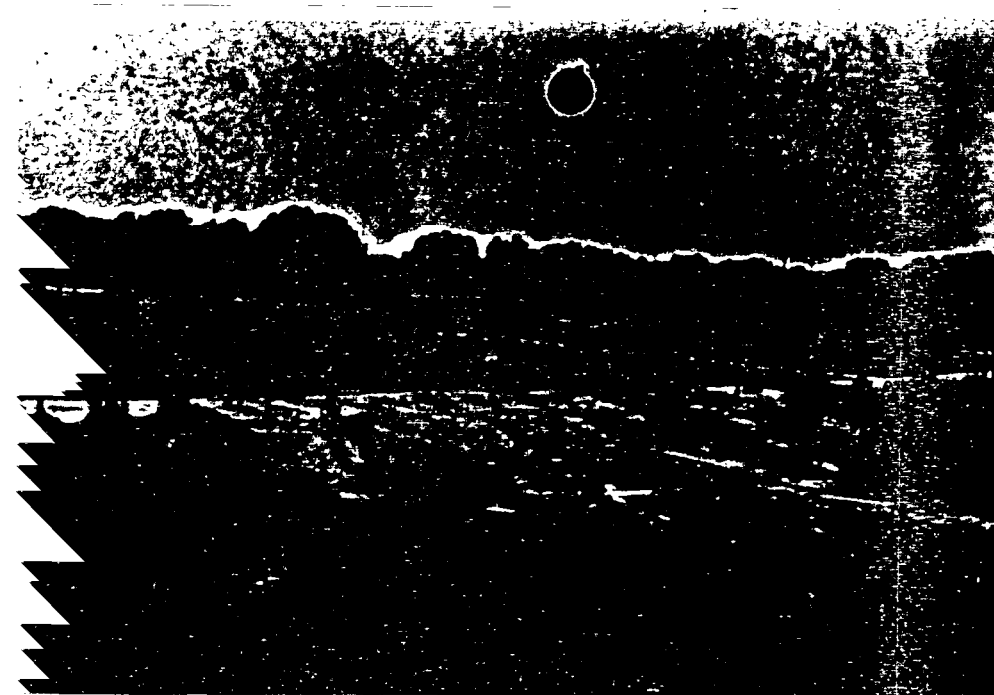
LEGEND

1. Acid wastewater pit
2. Acid pit dredge mat'l
3. Lime pile (standing water)
4. Lime wastewater settling
5. Over flow pond
6. Over flow pond
7. Dry overflow pond (used as plant landfill)
8. Empty 55 gal. drums
9. Hydrofluoric acid drums
10. Process ponds
11. Sample point #1
12. Sample point #2









Photographer / Witness PHOTO #1

SANDRA ANTONETTE / GORDON DUNN

Date / Time / Direction

6-23-81 / 1100 / WEST

Comments: ACID WASTEWATER PIT  
WITH NRC RUNOFF PATH.

STANDING WATER IN FEEPERLAND  
LINER IN GOOD CONDITION



Photographer / Witness PHOTO #2

SANDRA ANTONETTE / GORDON DUNN

Date / Time / Direction

6-23-81 / 1057 / SOUTH

Comments: ACID SLUDGE FROM ACID  
PIT (PHOTO #1) COVERED WITH  
LINER. LINER IN FAIR CONDITION.  
SLUDGE DEPOSITED EAST OF ACID PIT.



Photographer / Witness PHOTO #3

SANDRA ANTONETTE / GORDON DUNN

Date / Time / Direction

6-23-81 / 1105 / NW

Comments: ACID SLUDGE



Photographer / Witness PHOTO #4

SANDRA ANTOINETTE / GORDON DUNNAN

Date / Time / Direction

6.23.81 / 1120 / SW

Comments: PHOTOS OF #2 & #3

LIME SETTLING PONDS. FLUIDS IN

THESE PONDS COMES FROM MAIN

LIME SETTLING POND



Photographer / Witness PHOTO #5

SANDRA ANTOINETTE / GORDON DUNNAN

Date / Time / Direction

6.23.81 / 1109 / NW

Comments: EMPTY TIN SLAG DRUMS

(foreground) and FULL HYDROFLUORIC

CHLORIC ACID DRUMS (left

background). NORTH OF LIME POND.



Photographer / Witness PHOTO #6

SANDRA ANTOINETTE / GORDON DUNNAN

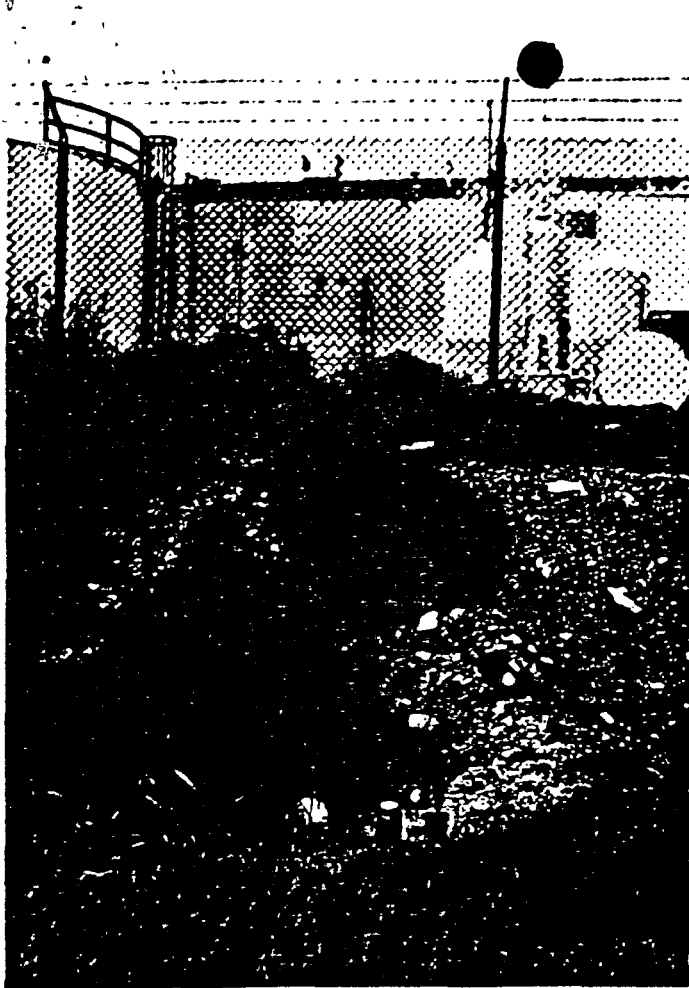
Date / Time / Direction

6.23.81 / 1127 / NW

Comments: OLD LIME SETTLING POND

CURRENTLY BEING USED AS

ON-SITE SOLID WASTE LANDFILL.



Photographer / Witness PHOTO #7

SANDRA ANTCINETTE / GORDON DUNCAN

Date / Time / Direction

JUNE 23, 1981 / 1205 / WEST

Comments: SAMPLE POINT #1.

SAMPLE OF SEDIMENT OF SEEPAGE

THROUGH DIKE TO OFF SITE.

(SEE AERIAL PHOTOGRAPH FOR  
SAMPLE POINT REFERENCE)

Photographer / Witness

Date / Time / Direction

Comments: \_\_\_\_\_



Photographer / Witness PHOTO #8

SANDRA ANTCINETTE

Date / Time / Direction

6.23.81 / 1215 / EAST

Comments: SURFACE WATER RUNOFF

OUTFALL INTO ARKANSAS RIVER.

SAMPLE #2 TAKEN DOWNDIP

FROM THIS POINT. SEE AERIAL

PHOTO FOR SAMPLE POINT  
REFERENCE



LINE PILE

STANDING WATER SECTION  
THROUGH DIKE. SAMPLE #1  
TAKEN ON OPPOSITE SIDE  
OF FENCE

Photographer / Witness (PANORAMA #1)

SANDRA KUKLISH / GORDON DUNCAN

Date / Time / Direction

JUNE 23, 1981 / 1109 / SOUTH TO EAST

Comments: PANORAMA OF OPEN

LINE PILE AND EMPTY TIN SLAG

DRUMS. RUNOFF GOES THROUGH

LINE PILE AND COLLECTS NEAR DIKE.

Photographer / Witness

Date / Time / Direction

Comments:

Photographer / Witness

Date / Time / Direction

Comments:

Photographer / Witness (PANORAMA #2)

SANDRA ANTRINETTE / GORDON DUNCAN

Date / Time / Direction

JUNE 23, 1981 / 1120 / WEST TO SOUTH

Comments: PACTO OF LIME

SETTLING POND. OVERFLOW

RUNS INTO TWO ADJACENT

SETTLING PONDS (SEE PHOTO #4)

Photographer / Witness

Date / Time / Direction

Comments:

Photographer / Witness

Date / Time / Direction

Comments:

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SEE BACK OF FORM SET FOR COMPLETE PREPARATION INSTRUCTIONS.

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0152-5040-7

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JUN 26 1984

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DR. LANGLEY

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Recipient's Phone Number

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DEPARTMENT/FLOOR NO.

FEDERAL EXPRESS LAB

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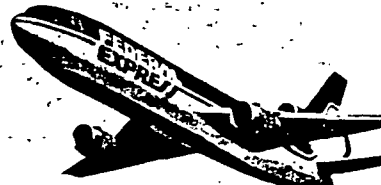
OTHER

TOTAL CHARGES

PART # 2041734049

REVISION DATE 5-15-80

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EDEN DUNCAN

BUSINESS &amp; GOVERNMENT INC.

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STATE

LA

LNO. 0093146104

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FOR CORRECT INVOICING

75201

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IM 06810535

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Account Number/Credit Card Number

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NIGHT ENVELOPE 8

NIGHT BOX 9

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DELIVERY AND SPECIAL HANDLING  
CHECK SERVICES REQUIRED☐ HOLD FOR PICK-UP AT FOLLOWING  
FEDERAL EXPRESS LOCATION SHOWN  
IN SERVICE GUIDE.

2

☒ DELIVER

3

☐ SATURDAY SERVICE REQUIRED

4

☐ RESTRICTED ARTICLES SERVICE (P-1 and

5

☐ SSS Signature Security Service

6

☐ DRY ICE

7

☐ OTHER SPECIAL SERVICE

8

9

PIECES

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**Office of Enforcement**

**REGION 8**

**First International Bldg., 1201 Elm St.**

**Dallas, Texas 75270**

## CHAIN OF CUSTODY RECORD

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files**

# **Dangerous Properties of Industrial Materials**

Sixth Edition

**N. IRVING SAX**

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger



**VAN NOSTRAND REINHOLD COMPANY**  
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE



RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> Phone Call <input type="checkbox"/> Discussion <input type="checkbox"/> Field Trip	
		<input type="checkbox"/> Conference <input type="checkbox"/> Other(Specify)	
(405) 271-2575		(Record of Item Checked Above)	
TO: Nona Aldridge Oklahoma Water Resources Board Oklahoma City, OK 73152		FROM: Thomas A Lensing, Jr., FIT Biologist <i>Thomas A. Lensing Jr.</i>	DATE 10/29/87 TIME 10:30 am
SUBJECT Ground Water Use in Three-Mile Radius			
SUMMARY OF COMMUNICATION			
Q: Can you tell me about ground water use in the area, if any?			
A: All I can tell you is there are four wells used for irrigation purposes.			
The wells are located in T15N, R19E Sections 14, 15 and 22. She did not know the actual acres irrigated. She said drinking water in eastern Oklahoma is supplied by surface water. These were the only wells that she had records of.			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
INFORMATION COPIES TO:			

RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> Phone Call <input type="checkbox"/> Discussion <input type="checkbox"/> Field Trip
		<input type="checkbox"/> Conference <input type="checkbox"/> Other(Specify)
(918) 682-5021		(Record of Item Checked Above)
TO:	FROM:	DATE
Richard Horner City of Muskogee Water Plant Muskogee, OK	Thomas A. Lensing, Jr., FIT Biologist <i>Thomas A. Lensing Jr.</i>	10/28/87
		TIME
		09:00am
SUBJECT		
Drinking Water Supply for Muskogee and Ft. Gibson		
SUMMARY OF COMMUNICATION		
Q: Mr. HORner, do you know where Muskogee receives their drinking water		
from?		
A: The City of Muskogee receives their drinking water from Ft. Gibson Lake.		
An old intake located near the confluence of the Keosho River and Arkan-		
sas River serves as an emergency backup supply. The Muskogee Water Dis-		
trict also provides drinking water for the residence northeast of the		
city through a series of rural water districts. Mr. Horner also informed		
me that Ft. Gibson is also supplied with surface water. Their intake is		
located just west of the city on the Neosho River. Mr. Horner also		
stated that he did not know of any surface water withdrawals for irriga-		
purposes.		
CONCLUSIONS, ACTION TAKEN OR REQUIRED		
INFORMATION COPIES		
TO:		

RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> Phone Call <input type="checkbox"/> Discussion <input type="checkbox"/> Field Trip	
(405) 521-2739		<input type="checkbox"/> Conference <input type="checkbox"/> Other(Specify)	
		(Record of Item Checked Above)	
TO: John Skeen US Fish and Wildlife Service Oklahoma City, OK		FROM: Thomas A. Lensing, Jr., FIT Biologist <i>Thomas A. Lensing</i>	DATE 1/15/88 TIME 9:00am
SUBJECT Critical Habit of the Bald Eagle			
SUMMARY OF COMMUNICATION			
Q: Is the Bald Eagle known to inhabit the Arkansas River along Muskogee in the winter time?			
A: Yes, the Bald Eagle nests all along the Arkansas River in the wintertime. There are numerous sitings each year.			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
INFORMATION COPIES TO:			